What is claimed is:

1. An arrangement for generating the group delay of a communication system, the arrangement comprising:

an adaptive equalizer operably coupled to receive a demodulated digital signal, the adaptive equalizer operable to generate an equalized signal using a set of equalizer coefficients;

a weight update device operable to generate the set of equalizer coefficients using an error signal, the error signal representative of a difference between an ideal demodulated signal and the received demodulated signal;

a processor operably coupled to receive said set of equalizer coefficients from the weight update device, the processor operable to

generate a phase response of the channel based upon the set of equalizer coefficients;

generate a group delay for the channel based upon the generated phase response.

2. The arrangement of claim 1 wherein said processor is operable to perform a discrete Fourier transform to generate the phase response.

3. The arrangement of claim 2 wherein said processor is operable to perform the discrete Fourier transform by performing a fast Fourier transform.

4. The arrangement of claim 3 wherein said processor is further operable to augment the equalizer coefficients with a number of zero coefficients sufficient to produce a number of coefficients that is a power of two prior to performing the fast Fourier transform.

5. The arrangement of claim 1 wherein the processor is operable to generate the group delay by determining the slope between the phase angles in order to determine an equalizer group delay.

6. The arrangement of claim 5 wherein the processor is operable to generate the group delay by inverting the equalizer group delay to obtain a system group delay.

7. The arrangement of claim 5 wherein the processor is operable to determine the slope by:

fitting a function to the phase angles; and

computing a first derivative of the function.

8. The arrangement of claim 5 wherein the processor is operable to determine the slope by:

computing a difference between two phase angles; and

computing a difference between the frequencies corresponding to the two phase angles to generate a group delay measurement for the channel.

9. The arrangement of claim 1 further comprising a symbol decision device coupled to the adaptive equalizer to receive the equalized signal and generate the error signal based on the equalized signal.

10. A method for determining phase response of a channel in a CATV system comprising:

a) obtaining a set of equalizer coefficients from an equalizer, said set of equalizer coefficients representative of a measure of a response of the channel;

b) generating a phase response of the channel based upon the set of equalizer coefficients;

c) generating a group delay for the channel based upon the generated phase response.

11. The method of claim 10 wherein step b) further comprises computing a discrete Fourier transform of the set of equalizer coefficients to determine components for computing the phase angles.

12. The method of claim 10 wherein step b) further comprises performing a fast Fourier transform of the set of equalizer coefficients to determine components for computing the phase angles.

13. The method of claim 11 wherein step b) further comprises augmenting the set of equalizer coefficients, prior to performing the fast Fourier transform, with a sufficient

number of zero coefficients to make the set of equalizer coefficients a power of two.

14. The method of claim 13 wherein step b) further comprises determining a plurality of phase angles from the computed discrete Fourier transform, the plurality of phase angles constituting the phase response.

15. The method of claim 11 wherein step b) further comprises determining a plurality of phase angles from the computed discrete Fourier transform, the plurality of phase angles constituting the phase response.

16. The method of claim 10, wherein step c) further comprises determining a slope between at least two of the phase angles.

17. The method of claim 16 wherein step c) further comprises multiplying the slope by a scaling factor to generate an equalizer group delay.

18. The method of claim 17 wherein step c) further comprises inverting the equalizer group delay to obtain the group delay for the channel.

19. The method of claim 16 wherein the slope determination further comprises:

fitting a function to the phase angles; and

computing a first derivative of the function.

20. The method of claim 19, wherein the function fitting comprises using one of a linear regression method and a parametric function method to fit a function to the phase angles.

21. The method of claim 16 wherein the slope determination comprises:

computing a difference between two phase angles; and

computing a difference between the frequencies corresponding to the two phase angles to generate a group delay measurement for the channel.

22. A method for determining phase response of a channel in a CATV system comprising:

a) obtaining a set of equalizer coefficients from an equalizer, said set of equalizer coefficients representative of a measure of a response of the channel;

b) generating a phase response of the channel based upon the set of equalizer coefficients;

c) determining a slope between at least two of the phase angles;

d) multiplying the slope by a scaling factor to generate an equalizer group delay; and

e) inverting the equalizer group delay to obtain the group delay for the channel.